THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

COLORADO RIVER AQUEDUCT

AN ESTIMATE OF THE DISTRIBUTION OF BENEFITS WHICH WILL ACCRUE TO OTHER STATES THAN CALIFORNIA FROM THE USE OF PUBLIC WORKS ADMINISTRATION FUNDS IN THE CONSTRUCTION OF THE COLORADO RIVER AQUEDUCT

WHT
7

Report No. 602

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

COLORADO RIVER AQUEDUCT

AN ESTIMATE OF THE DISTRIBUTION OF BENEFITS WHICH WILL ACCRUE TO OTHER STATES THAN CALIFORNIA FROM THE USE OF PUBLIC WORKS ADMINISTRATION FUNDS IN THE CONSTRUCTION OF THE COLORADO RIVER AQUEDUCT

NOVEMBER 10, 1933

F. E. WEYMOUTH
General Manager and Chief Engineer

AN ESTIMATE OF THE DISTRIBUTION OF THE BENEFITS WHICH WILL RESULT FROM THE USE OF PUBLIC WORKS ADMINISTRATION FUNDS FOR THE CONSTRUCTION OF THE COLORADO RIVER AQUEDUCT

The Project

The Colorado River aqueduct project of The Metropolitan Water District of Southern California is being constructed for the purpose of bringing Colorado River water to the rapidly growing metropolitan area of Southern California. Present water resources have been utilized to the limit and additional water must be imported or the area must surely retrogress.

Estimated Cost

The project is estimated to cost $209,420,000, including all construction for main aqueduct and distribution system, right of way, organization and preliminary engineering expense, and purchase of the Pine Canyon reservoir. Of this amount, $193,700,000 will be for direct construction costs. It is estimated that $95,039,000 will be expended directly for labor and $77,260,000 for equipment, materials, and supplies. The division of these expenditures between California and the rest of the United States is shown in Table 1:

TABLE 1

Cost of project divided among labor, material, and other costs

Items of cost	*Outside California*	*Inside California*	*Total*
Labor	$ 4,522,000	$ 90,517,000	$ 95,039,000
Equipment, material, and supplies	56,245,000	21,015,000	77,260,000
Other costs including contractors' profit and costs for financing, bonds, insurance	18,566,000	2,835,000	21,401,000
Total direct construction cost	$79,333,000	$114,367,000	$193,700,000
Cost of right of way, Pine Canyon reservoir, etc.			15,720,000
		TOTAL	$209,420,000

Benefits of Project Not Purely Local

The entire United States has a large self-interest in this project because it is estimated that of the total expenditures for material alone, 73 per cent, or $56,245,000, will go outside the State to agencies supplying finished products and raw materials for use in the manufacture of these products. This self-interest is increased when it is understood that of the total expenditures made directly for construction (including both labor and material), it is estimated that 41 per cent, or $79,333,000, will go outside of California. This interest is still further increased when it is understood that for each dollar paid to a California workman, 29 per cent goes directly outside the state. These distributions outside California when totalled equal $105,600,000 or 55 per cent of the total amount to be expended directlyfor construction.

Classification of Goods Required

Comprising the $77,260,000 to be expended for equipment, materials, and supplies, are the expenditures for the items shown in Table 2, wherein is also shown the estimated expenditure for each of twelve commodities and the amounts which will go outside California in each case.

TABLE 2

Classification of materials and supplies and of expenditures inside and outside of California

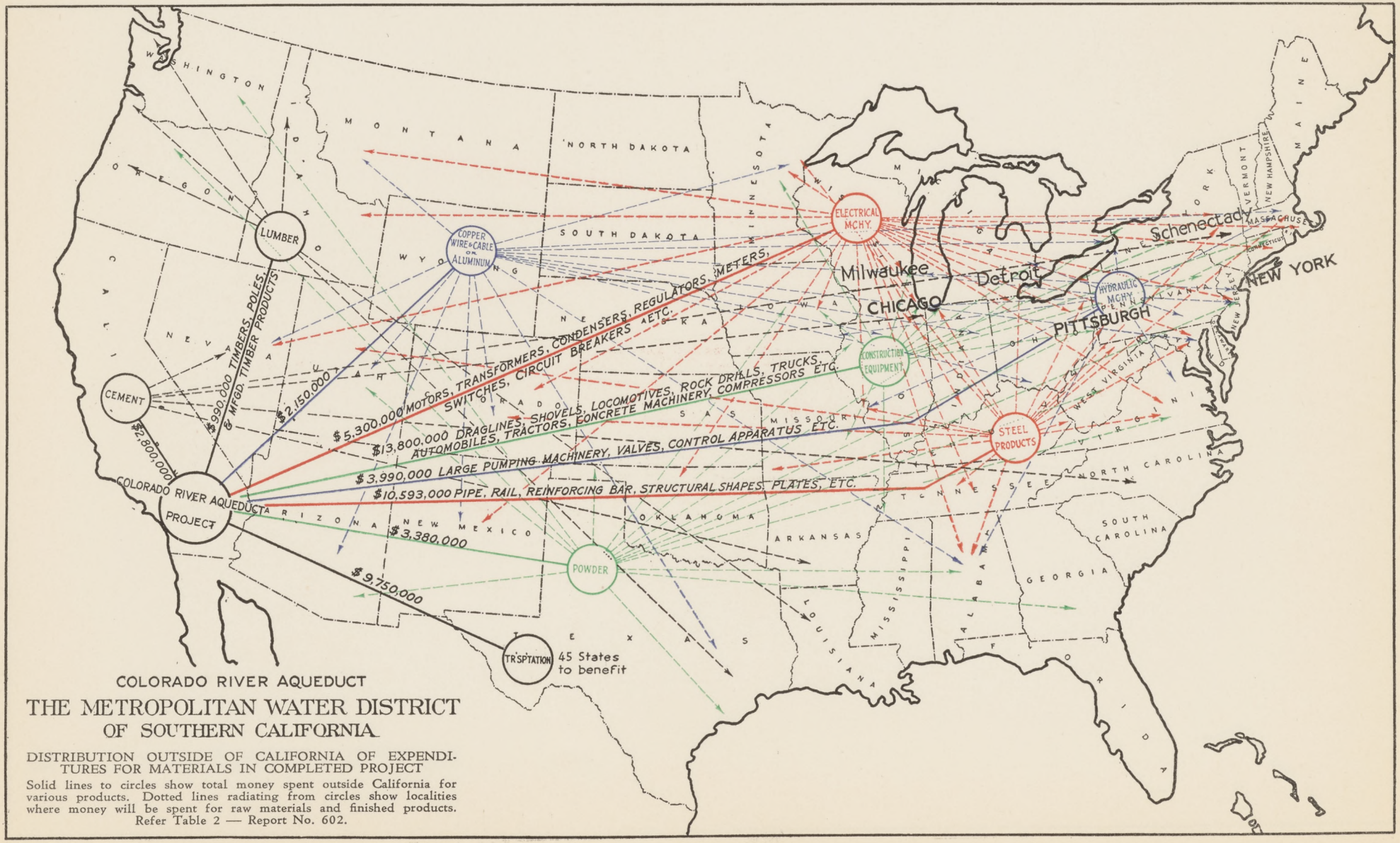
		Distribution	
Construction materials	*Total value*	*Other states*	*California*
Construction equipment	$15,550,000	$13,800,000	$ 1,750,000
Steel products	14,770,000	10,593,000	4,177,000
Cement	9,700,000	2,800,000	6,900,000
Electric machinery	5,800,000	5,300,000	500,000
Explosives	4,900,000	3,380,000	1,520,000
Hydraulic machinery	4,050,000	3,990,000	60,000
Copper products	2,300,000	2,150,000	150,000
Lumber	1,090,000	990,000	100,000
Road oil	150,000	30,000	120,000
Miscellaneous small tools and supplies	3,620,000	2,600,000	1,020,000
SUBTOTAL	$61,930,000	$45,633,000	$16,297,000
Transportation (freight)	13,370,000	9,750,000	3,620,000
Total construction materials and equipment	$75,300,000	$55,383,000	$19,917,000
Percentages of total		73.5	26.5
Electric power (240,000,000 kw-hr.)	1,960,000	862,000	1,098,000
GRAND TOTAL	$77,260,000	$56,245,000	$21,015,000
Percentages of total		72.8	27.2

On Charts 1, 2, and 3 are shown graphically the states which will benefit by the purchase of these materials. The figures shown in each case are the amounts of money which will go outside of California.

Sources of Data

The data used in preparation of the charts and figures herein have been drawn wherever possible from publications of the United States Department of Commerce. In certain cases these data have been reconciled with information obtained as the result of direct inquiries made to representative manufacturers.

Estimated total cost of project is $209,420,000. Direct construction cost is $193,700,000. Expenditures outside of California are $105,583,000 or 55 per cent of direct cost. Of these: $55,383,000 is for material — $30,772,000 is for labor (including direct benefits and expenditures of workmen) and $19,428,000 for surety bonds, insurance, contractors' financing and profit, etc.



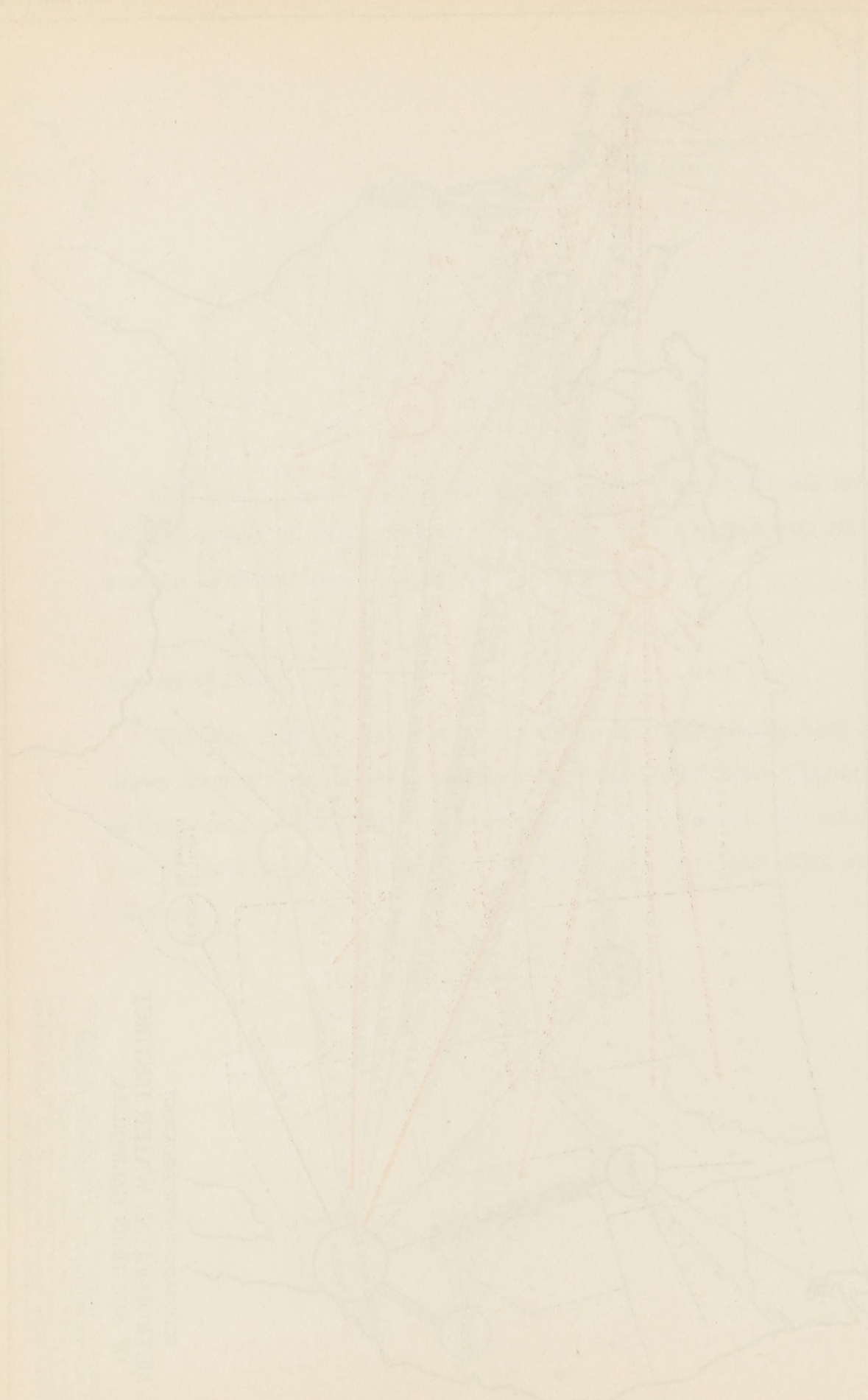
COLORADO RIVER AQUEDUCT

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

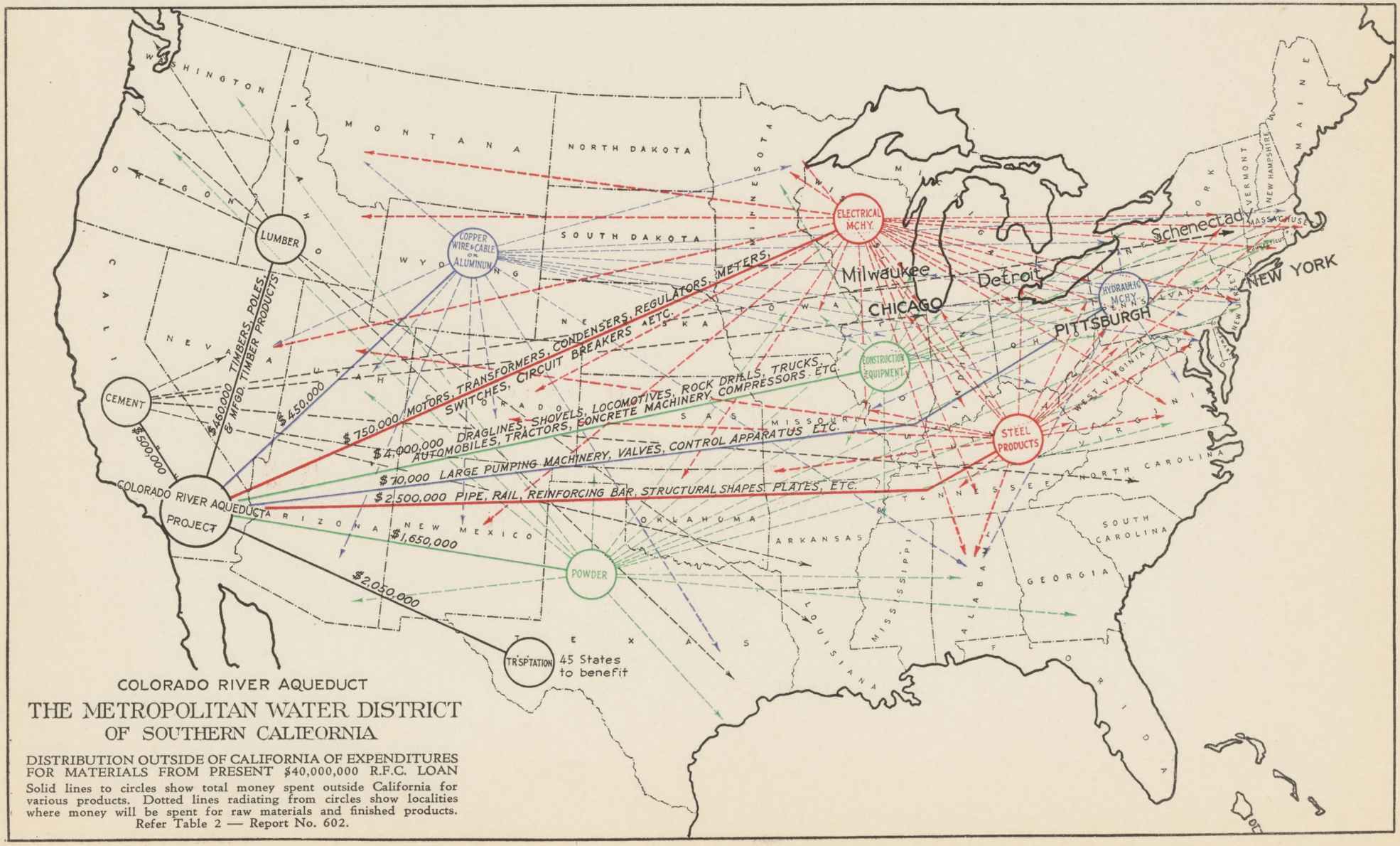
DISTRIBUTION OUTSIDE OF CALIFORNIA OF EXPENDITURES FOR MATERIALS IN COMPLETED PROJECT

Solid lines to circles show total money spent outside California for various products. Dotted lines radiating from circles show localities where money will be spent for raw materials and finished products. Refer Table 2 — Report No. 602.

CHART 1



Estimated total cost of project is $209,420,000. Direct construction cost is $193,700,000. Expenditures outside of California are $105,583,000 or 55 per cent of direct cost. Of these: $55,383,000 is for material — $30,772,000 is for labor (including direct benefits and expenditures of workmen) and $19,428,000 for surety bonds, insurance, contractors' financing and profit, etc.



COLORADO RIVER AQUEDUCT

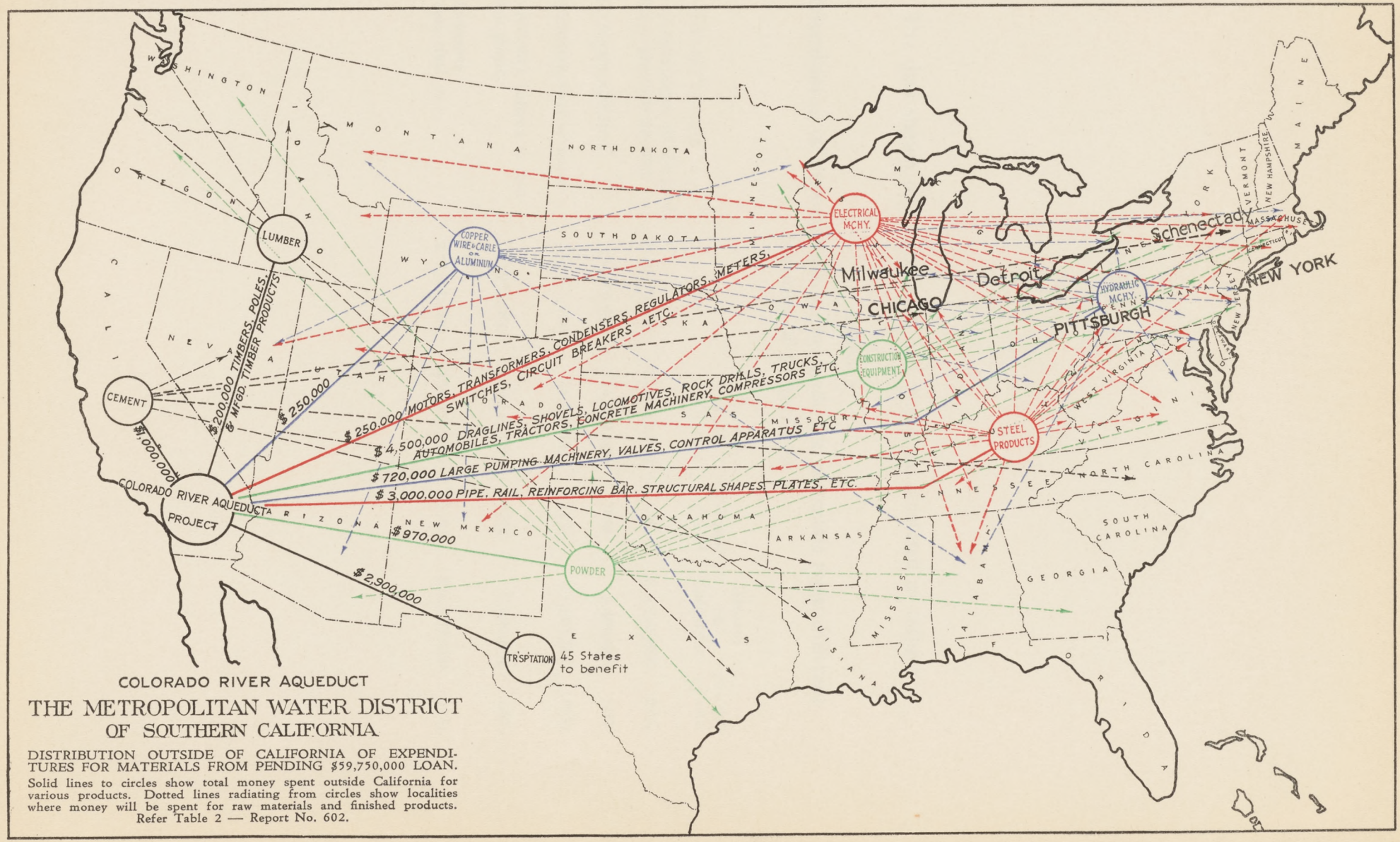
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

DISTRIBUTION OUTSIDE OF CALIFORNIA OF EXPENDITURES FOR MATERIALS FROM PRESENT $40,000,000 R.F.C. LOAN

Solid lines to circles show total money spent outside California for various products. Dotted lines radiating from circles show localities where money will be spent for raw materials and finished products.
Refer Table 2 — Report No. 602.

CHART 2

Estimated total cost of project is $209,420,000. Direct construction cost is $193,700,000. Expenditures outside of California are $105,583,000 or 55 per cent of direct cost. Of these: $55,383,000 is for material — $30,772,000 is for labor (including direct benefits and expenditures of workmen) and $19,428,000 for surety bonds, insurance, contractors' financing and profit, etc.



COLORADO RIVER AQUEDUCT

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

DISTRIBUTION OUTSIDE OF CALIFORNIA OF EXPENDITURES FOR MATERIALS FROM PENDING $59,750,000 LOAN.

Solid lines to circles show total money spent outside California for various products. Dotted lines radiating from circles show localities where money will be spent for raw materials and finished products. Refer Table 2 — Report No. 602.

CHART 3

The data shown on Charts 1, 2, and 3 may be tabulated as follows:

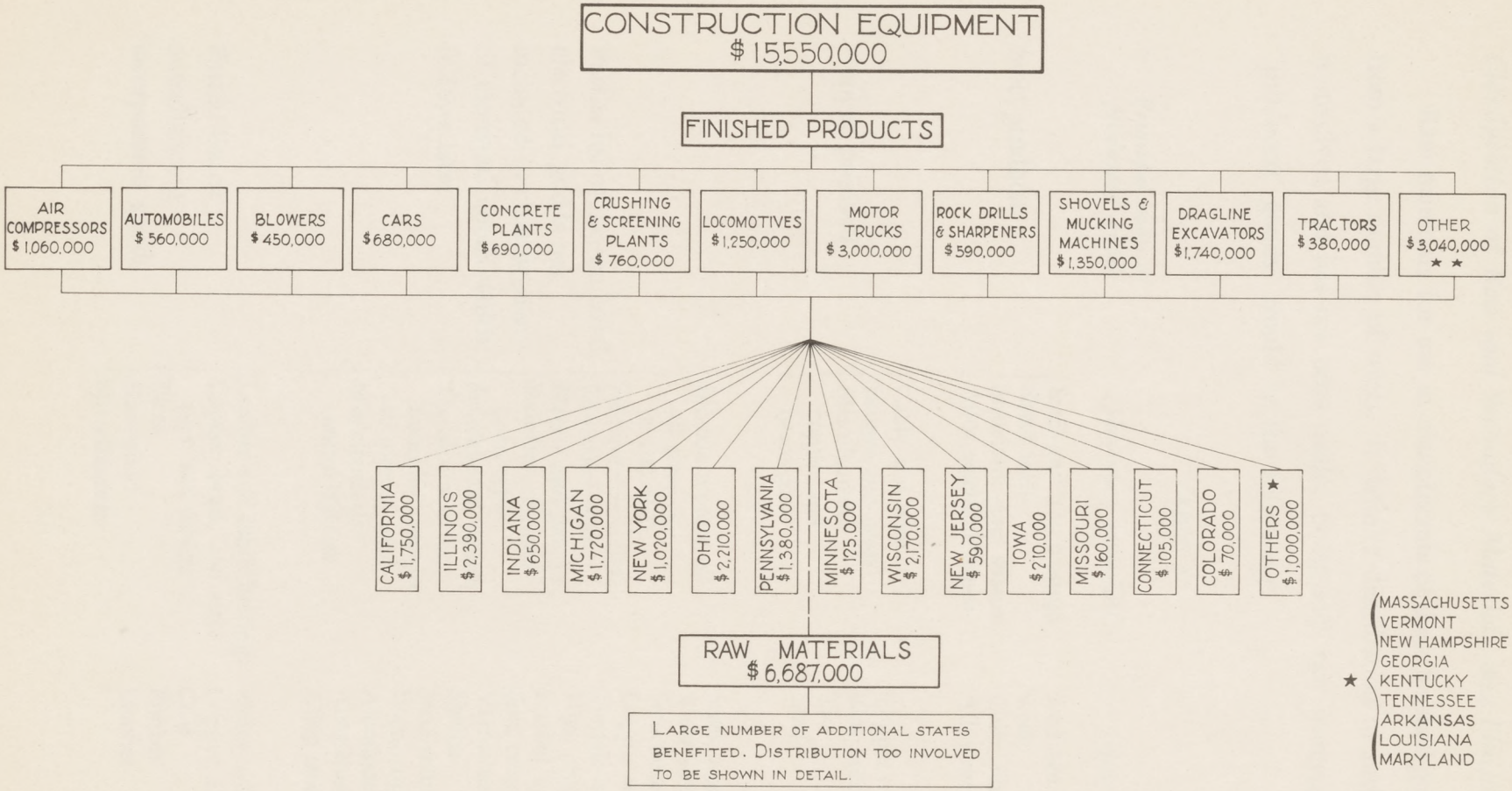
TABLE 3

Distribution of expenditures to be made for materials from different portions of project cost

Basis of Financing	*Total*	*Amount outside California*	*Per cent of total*	*Amount in California*	*Per cent of total*
For an expenditure of $40,000,000, as presently financed	$18,275,000	$13,510,000	74%	$ 4,765,000	26%
$ 59,750,000 additional	21,030,000	14,630,000	70%	6,400,000	30%
$ 99,750,000, total of above	39,305,000	28,140,000	72%	11,165,000	28%
$109,670,000, balance to complete project	37,955,000	28,113,000	74%	9,842,000	26%
$209,420,000 Grand total cost	$77,260,000	$56,253,000	73%	$21,007,000	27%

Distribution of $15,550,000 for Construction Equipment

Chart No. 4 shows graphically the distribution of $15,550,000 for construction equipment. The figures shown represent the estimated amounts of money which will be spent throughout the construction period of about six years for equipment and the replacements and parts necessary to keep this equipment operating. Only the principal items have been shown, since the number of different kinds of equipment are legion, and many must be grouped into a miscellaneous class. Expenditures for finished goods in the fifteen states enumerated range from $70,000 to $2,390,000, with $1,000,000 to be spent in eighteen other states.



★★ Additional items to the total amount of $3,040,000, which are impractical of detailed distribution include: Backfilling Machines, Cableways, Derricks and Hoists, Fire Fighting Apparatus, Motor-Generators, Refrigerating Plants, Road Building equipment, Trenching Machines, Miscellaneous equipment, Repair Parts, Replacements etc.

The distribution of benefits to the various states is based on the production of the class of material indicated in comparison with the total 1929 U.S. production. All data based on U.S. Department of Commerce reports and the 1930 Census.

Source of Data
Bureau of Census
U.S. Department of Commerce
Manufactures-1929
Vol. II, Page 1102, Table 2

Cross Reference, Table #2 Report #602

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

COLORADO RIVER AQUEDUCT

DISTRIBUTION OF EXPENDITURES FOR CONSTRUCTION EQUIPMENT

DRAWN J.F.B. RECOMMENDED
TRACED W.M.S.N. APPROVED
CHECKED

LOS ANGELES 11-2-'33 A-892-1

CHART 4

Classification of Raw and Secondary Materials, and Finished Products

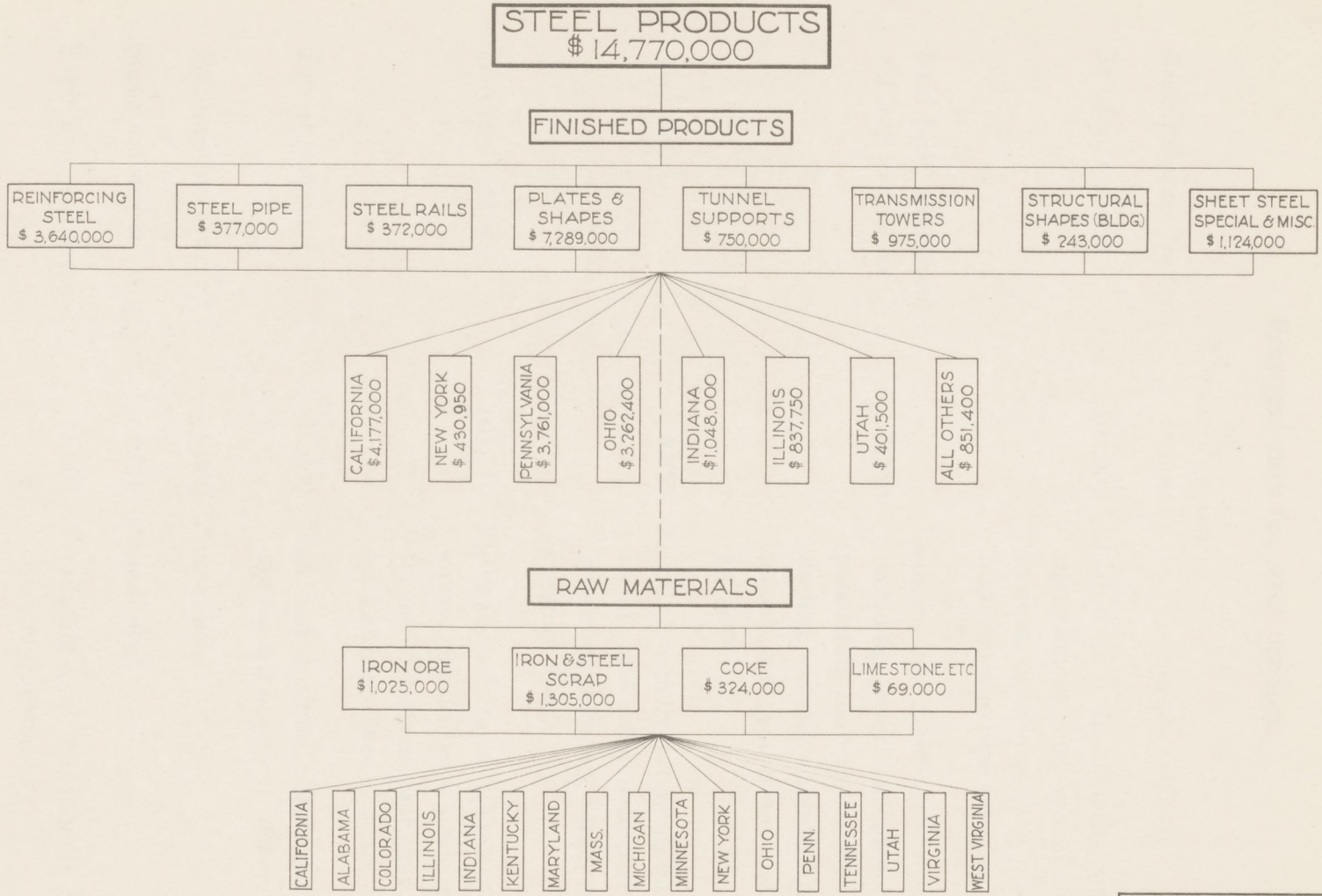
Raw materials for use in manufacture of these finished goods will be drawn from a large number of states. A definite distribution to such states, however, is involved and has not been made. Some such raw materials in the form of "producers' goods" would be the following:

TABLE 5

Principal items of producers' goods	*Secondary materials*	*Basic raw materials*
Steel products	Steel and iron castings	Iron ore
	Sheet steel	Coal
	Structural steel shapes	Coke, limestone
	Alloy steels, all kinds	Alloy metals, all kinds
Copper products	Cable and wire	Copper ores
	Bronze and brass	Zinc ores
	Miscellaneous copper and brass parts	Tin
		Coal
Partial list of incorporated electrical goods not included in classification of electrical goods which follows later	Electric motors of all sizes, ¼ to 200 H.P.	Steel, iron castings
		Sheet steel
		Structural shapes
	Starting controllers	Copper wire, cable
	Resistance grids	Electric iron
	Meters and gauges	High resistance metals
	Switches, oil, and open types	Rubber insulation
		Silk, cotton, insulation
	Switchboard panels	Varnishes
	Transformers for immediate service to motors used	Shellac
		Steel stampings
	Miscellaneous control devices	Brass, copper
		Aluminum
		Aluminum alloy
		Alloy steels
Partial list of miscellaneous incorporated goods	Leather and fabric beltings	Hides, rubber, cotton
	Copper, brass, and steel pipe and tubing	Copper, zinc, iron ores
		Coal
	Tires	Rubber
	Hardwood	Lumber
	Miscellaneous	

Distribution of Expenditures of $14,770,000 for Steel Products

Chart 5 shows graphically the distribution of benefits from the purchase of $14,770,000 worth of steel products of various kinds for incorporation in aqueduct structures. These products include eight general classifications which are shown in Table 6 with the principal uses of each set out opposite.



The distribution of benefits to the various states is based on the production of the class of material indicated in comparison with the total 1929 U.S. production. All data based on U.S. Department of Commerce and the 1930 Census.

Source of Data
Bureau of Census
U.S. Department of Commerce
Manufactures – 1929
Vol II, Page 951, Table 2; Table 11, Page 947.

Cross Reference, Table #2 Report #602

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

COLORADO RIVER AQUEDUCT

DISTRIBUTION OF EXPENDITURES FOR STEEL PRODUCTS

DRAWN J. F. B.
TRACED W. M. C. N.
CHECKED
RECOMMENDED
APPROVED

LOS ANGELES 11-2-'33 | A-892-2

CHART 5

TABLE 6

Principal uses for steel products

Principal steel products	*Estimated amount in tons*	*Principal uses*
Reinforcing steel	104,000	Reinforcing in canal lining, siphons, transition sections, special conduit sections, dams, pumping plant buildings, concrete pipe lines, etc.
Steel pipe, sizes from 1 inch to 8 inches	7,250	Domestic and construction water supply including water transmission line paralleling aqueduct for 180 miles, cooling systems, unwatering lines in tunnels and excavations, compressed air lines.
Steel rails	8,850	Track principally in tunnels but also for incline and other industrial railways at sites of pumping plants and penstock lines.
Plates and shapes	103,750	Plates and structurals for use in large diameter pressure pipe lines, membrane for use in concrete pipe lines, possible use in higher head siphons.
Tunnel support	10,000	Plate and structural shapes for supporting tunnels in lieu of timber.
Transmission towers	15,000	As indicated
Structural shapes (bldg.)	4,150	As indicated
Sheet steel and special	11,000	Ventilating conduit in tunnels, forms for concrete construction.
Total	264,000	Tons

Coast Steel Production Limited to Small Class of Goods

In estimating the benefits from purchase of steel, allowance was made for the fabrication of a large amount of some classes of these goods in California. At the present time, although most kinds of fabrication can be done on the Pacific coast and in California, structural angles larger than 6 inches must be brought from the East. Very few other shapes are rolled locally and all plates heavier than 10 gauge must be shipped in. No small pipe or rails are manufactured on the Pacific coast. Although it is possible that some California rolled shapes may be used, the pig iron for adding to scrap comes from Utah or other points, as also does the necessary coke. Even with these considerations, California could not well obtain more than 35 per cent of this steel business.

Distribution of Expenditures of $9, 700,000 for Cement

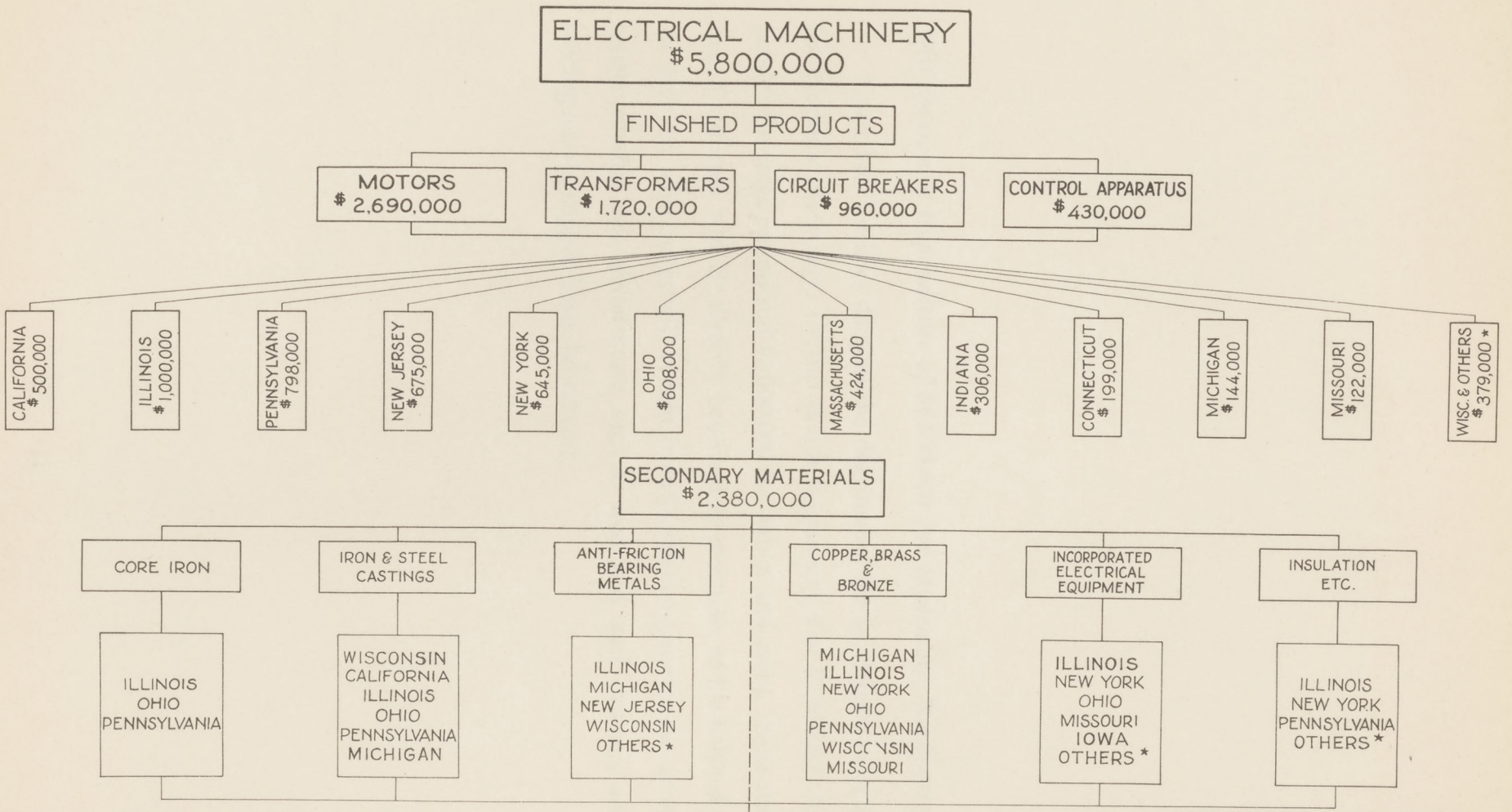
Cement is a large item of expense in the construction of the Colorado River aqueduct, since almost 5,000,000 cubic yards of concrete will be required. This cement will no doubt be drawn from four or five California mills.

Although the base of manufacturing operations is in California, $2,800,000 of this expenditure is expected to go outside of California. Machinery for plant renewals comes almost entirely from eastern plants; gypsum is mined in southern Nevada; packing materials come from Arkansas and North Carolina; and capital charges on the production of fuel and power will be paid to holders of securities in a large number of states other than California.

Distribution of Expenditure of $5,800,000 for Electrical Machinery

The Colorado River aqueduct project will require $5,800,000 in electric machinery, consisting of large synchronous motors for use with the pumping equipment; transformers of 250 kva. to 10,000 kva. and for voltages from 33 kv. to 220 kv.; circuit breakers for 11 kv., 33 kv., 66 kv., and 22 kv.; and control apparatus of all kinds and classes.

Chart No. 6 shows the distribution of these expenditures. The finished products will be drawn principally from twelve states, and many other states will benefit from the secondary and basic raw materials from which the finished products are made.



Cross Reference, Table #2 Report #602

★ Includes Connecticut, Indiana, Maine, Massachusetts, Minnesota, Oklahoma, Tennessee, Texas, Washington, West Virginia, Kansas and Maryland.

The distribution of benefits to the various states is based on the production of the class of material indicated in comparison with the total 1929 U. S. production. All data based on U. S. Department of Commerce reports and 1930 Census.

Source of Data
Bureau of Census
U.S. Department of Commerce
Manufactures-1929
Vol. II; Page 1123, Table 2 &
" 1140, " 6.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

COLORADO RIVER AQUEDUCT

DISTRIBUTION OF EXPENDITURES FOR ELECTRICAL MACHINERY

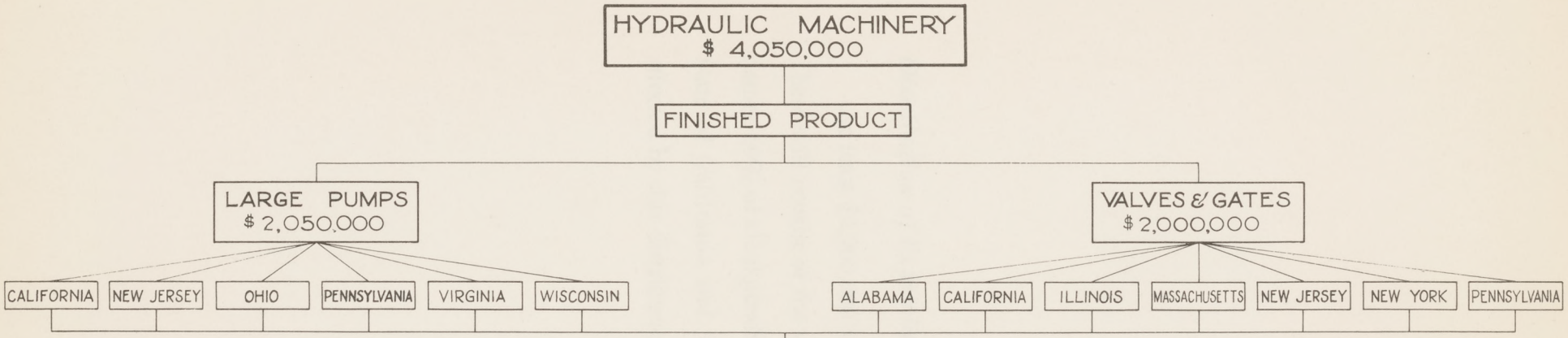
DRAWN J. F. B. RECOMMENDED
TRACED TOM
CHECKED APPROVED

LOS ANGELES, 11-2-'33 A-892-3

CHART 6

Distribution of Expenditure of $4,050,000 for Hydraulic Machinery

Chart No. 7 shows data on the distribution for $4,050,000 to be expended for hydraulic machinery. Of this sum it is estimated that $2,050,000 will be expended for large pumps and $2,000,000 for valves and gates. Nine states other than California will be directly benefited by purchases of the finished products. At least ten other states will benefit from $1,800,000 spent for the secondary materials entering into manufacture, such as iron and steel castings, antifriction bearing metals, copper, brass, bronze, etc.



STATE	IRON & STEEL CASTINGS	ANTI-FRICTION BEARING METALS	COPPER, BRASS & BRONZE
	PERCENTAGE FURNISHED BY STATES		
CALIFORNIA	6 %	2 %	3 %
ILLINOIS	40	29	37
IOWA	5	1	1
MICHIGAN	17	20	9
MISSOURI			1
NEW JERSEY			2
NEW YORK	1	2	2
OHIO	9	3	6
PENNSYLVANIA	5	5	9
WISCONSIN	14	37	28
ALL OTHER STATES	3	1	2
	100 %	100 %	100 %

~Source of Material Data~
Bureau of Census
U.S. Department of Commerce
Manufactures - 1929
Vol. II, Page 1140 & 1141, Table 6

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

COLORADO RIVER AQUEDUCT

DISTRIBUTION OF EXPENDITURES FOR HYDRAULIC MACHINERY

DRAWN H.G.G.
TRACED H.H.H.-W.M.S.N.
CHECKED
RECOMMENDED
APPROVED

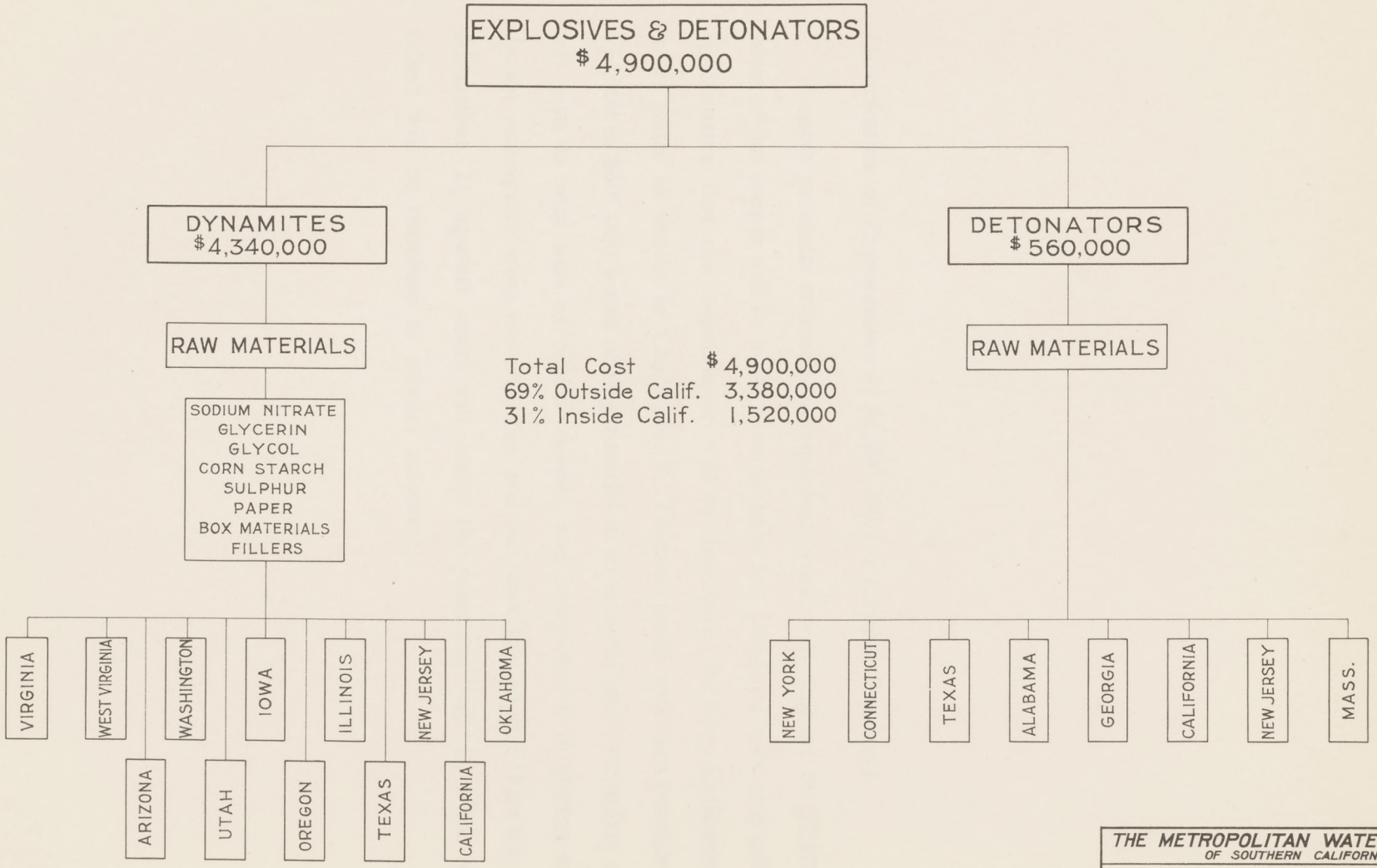
LOS ANGELES 11-2-'33 | A-892-4

CHART 7

Cross Reference, Table #2 Report #602

Distribution of Expenditure of $4,900,000 for Explosives

At least $4,900,000 worth of explosives will be required for the project. These will consist of the various kinds of blasting powders, dynamite, and detonators. 69% of all expenditures for explosives ($3,380,000) will go outside the State of California and 31% ($1,520,000) will remain in that State. The states affected by this distribution are shown on Chart 8 on the following page.



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

COLORADO RIVER AQUEDUCT

DISTRIBUTION OF EXPENDITURES FOR EXPLOSIVES

DRAWN C.W.F. RECOMMENDED
TRACED C.W.F. APPROVED
CHECKED

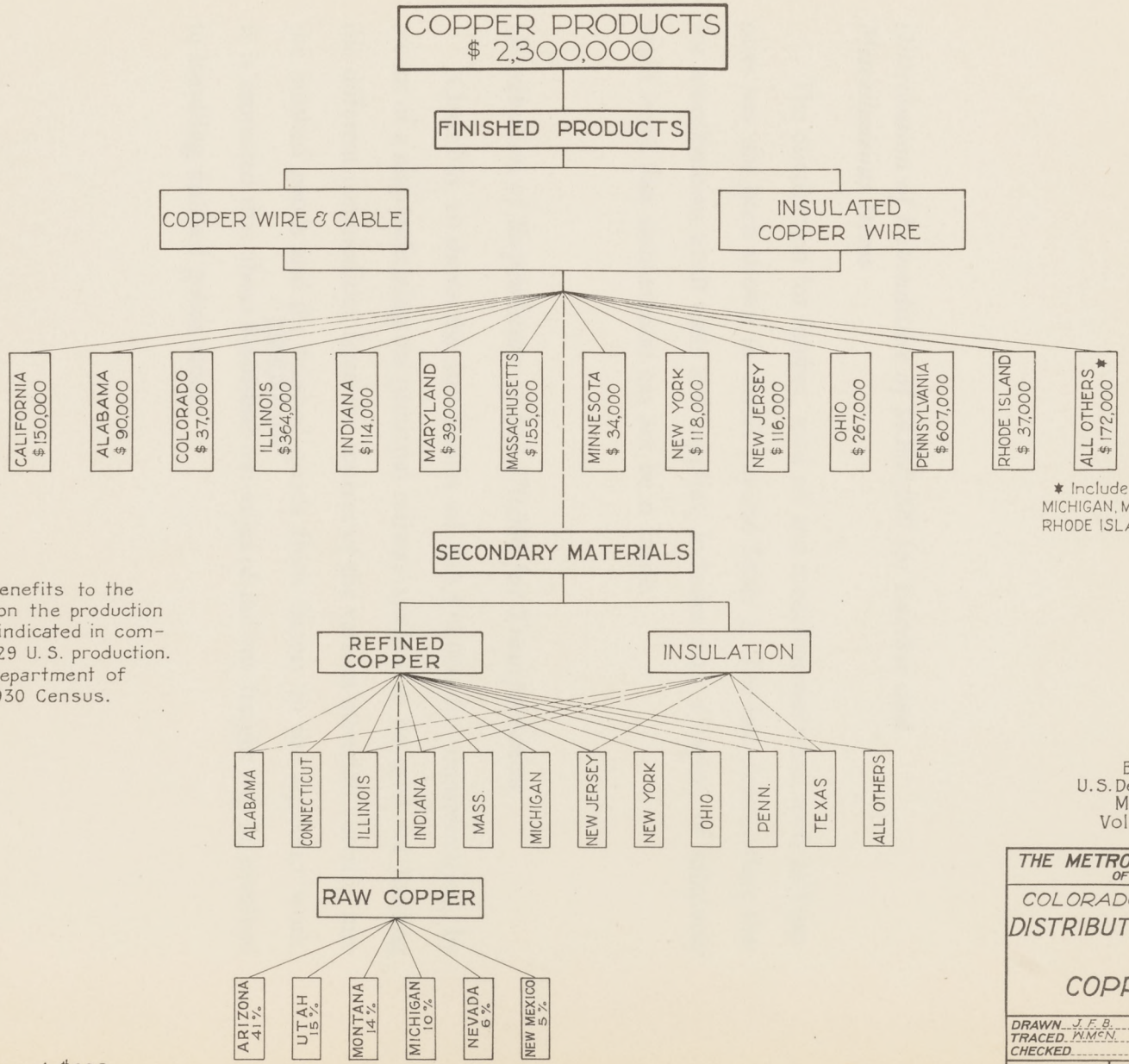
Los Angeles, 11-7-'33. A-894

CHART 8

Cross Reference, Table #2 Report #602

Distribution of Expenditure of $2,300,000 for Copper Products

Copper products required for aqueduct work will amount to $2,300,000. Most of this copper will be in the form of bare and insulated wire and cable. It is estimated that this expenditure will be distributed between California and other states as shown in Chart No. 9. Thirteen states will each provide from $34,000 to $607,000 worth of this material in its finished state; secondary materials such as wire bars of refined copper, and materials for insulation will be drawn principally from eleven states and the basic raw copper from six states. Altogether, 21 separate states will derive the principal benefits, while several others will be benefited in smaller amounts.



* Includes CONNECTICUT, GEORGIA, MICHIGAN, MISSOURI, MONTANA, TEXAS, RHODE ISLAND and WISCONSIN.

The distribution of benefits to the various states is based on the production of the class of material indicated in comparison with the total 1929 U. S. production. All data based on U. S. Department of Commerce reports and 1930 Census.

Source of Data
Bureau of Census
U.S. Department of Commerce
Manufactures -1929
Vol. II, Page 1018, Table 8

Cross Reference, Table #2 Report #602

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

COLORADO RIVER AQUEDUCT

DISTRIBUTION OF EXPENDITURES FOR COPPER PRODUCTS

DRAWN J. F. B. RECOMMENDED
TRACED W.M.C.N. APPROVED
CHECKED

LOS ANGELES A-892-5

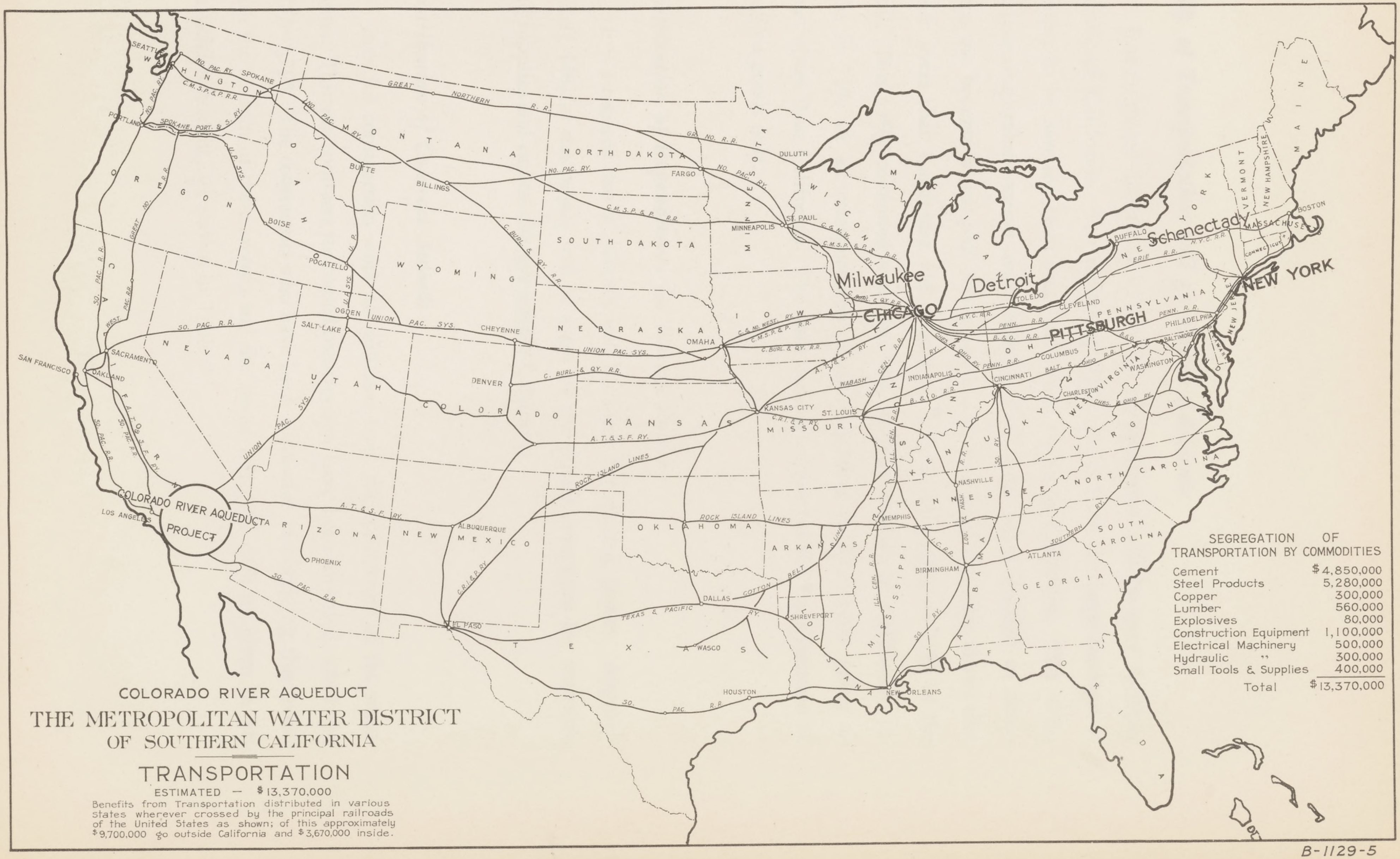
CHART 9

Distribution of Expenditure of $4,860,000 for Lumber and Miscellaneous Items

The distribution for lumber, road oil and miscellaneous small tools and supplies has not been shown in detail beyond Table 2. The last classification, that for miscellaneous small tools and supplies, includes such a variety of relatively small items that enumeration has not been made.

Distribution of Expenditure of $13,370,000 for Transportation

Chart No. 10 shows the distribution of $13,370,000 for transportation, by means of a map indicating the principal railway systems to be used for hauling the different commodities from the sources of the various materials entering into the finished goods and the finished goods from factory to the aqueduct work. It is estimated that about 1,200,000,000 ~~1,200,000~~ ton-miles of railway freight will be involved in handling finished goods alone.



COLORADO RIVER AQUEDUCT

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

TRANSPORTATION

ESTIMATED — $13,370,000

Benefits from Transportation distributed in various states wherever crossed by the principal railroads of the United States as shown; of this approximately $9,700,000 go outside California and $3,670,000 inside.

SEGREGATION OF TRANSPORTATION BY COMMODITIES

Cement	$4,850,000
Steel Products	5,280,000
Copper	300,000
Lumber	560,000
Explosives	80,000
Construction Equipment	1,100,000
Electrical Machinery	500,000
Hydraulic "	300,000
Small Tools & Supplies	400,000
Total	$13,370,000

B-1129-5

73% of Transportation will go outside California

It is estimated that about 58% of all transportation will be over facilities outside of California. The remaining 42% results from the large tonnage of cement to be handled from local mills over tracks in California. This 42%, representing transportation over tracks in California, when divided to determine the benefits which will accrue inside and outside of the state, shows that other states than California will benefit by 36% of this 42%, or 15% of the total. This 15%, combined with the 58% entirely outside of California, results in 73% of all transportation costs, amounting to $9,750,000 going to other states than California. The data considered are for the transportation of finished goods only.

Distribution of Expenditures for Electric Power

It is estimated that $1,960,000 will be spent for electric power. Approximately 44% of this money will be spent by the power companies for materials and supplies and capital charges outside California.

Distribution of Contract Awards

Bids for construction work are solicited from the contractors of the entire nation. Thirteen contracts for tunnel construction have been awarded, involving $27,945,795. The contractors who have been successful in obtaining this work, with the amount of their awards and the home office of each as given in his financial statement, are shown in Table 7.

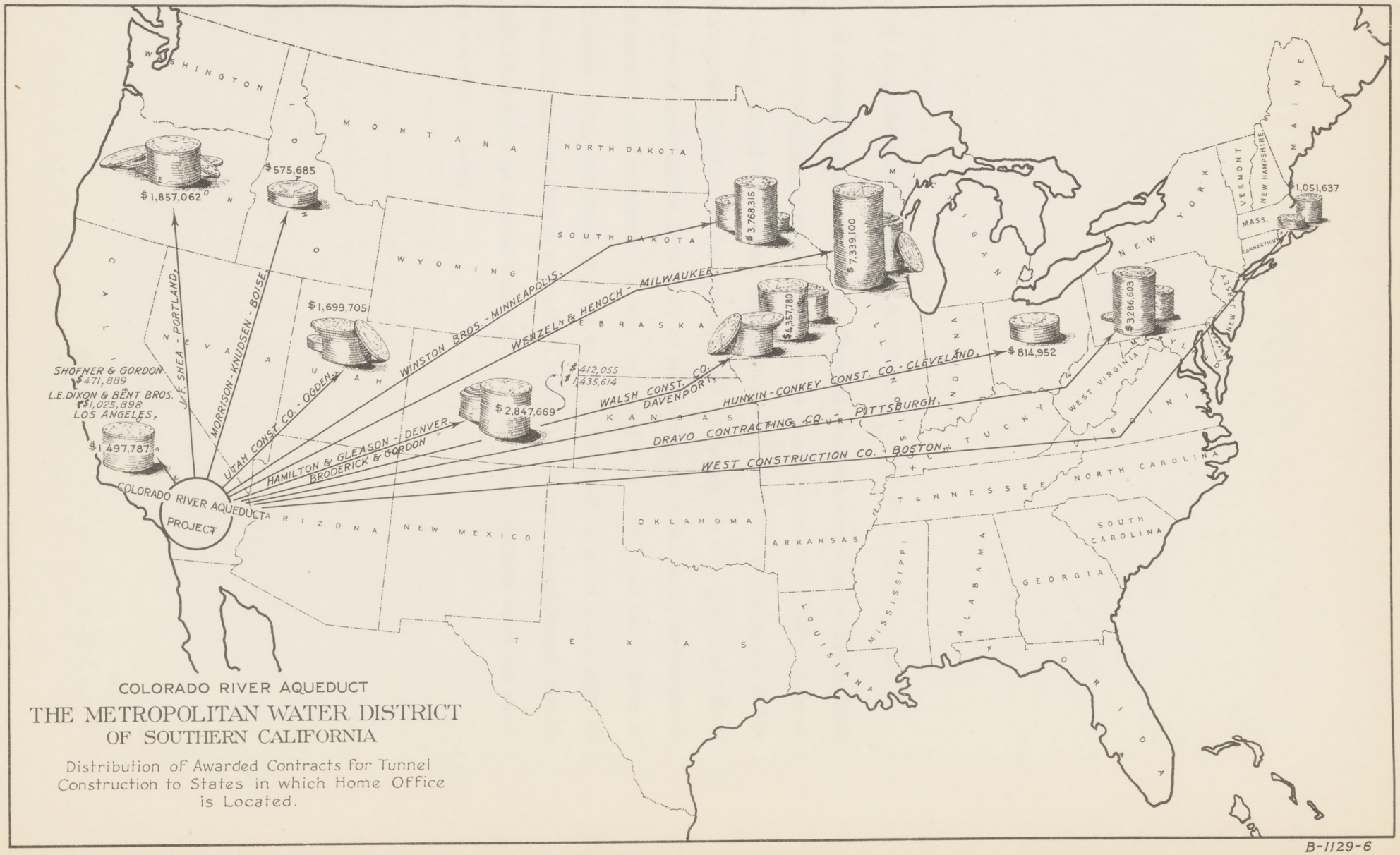
TABLE 7

Tabulation of contract awards

Contractor	*Contract Amount*	*Home Office*
Walsh Construction Co.	$4,357,780	Davenport, Iowa
Winston Bros. Co.	3,768,315	Minneapolis, Minn.
Utah Construction Co.	1,699,705	San Francisco & Ogden
Broderick and Gordon	1,435,614	Denver, Colorado
L. E. Dixon & Bent Bros. Co.	1,025,898	Los Angeles
Hunkin-Conkey Constr. Co.	814,952	Cleveland, Ohio
Gordon and Shofner	471,889	Los Angeles
J. F. Shea Co.	1,857,062	Portland, Ore.
Morrison-Knudsen Co.	575,685	Boise, Idaho
West Construction Co.	1,051,637	Boston, Mass.
Wenzel and Henoch	7,339,100	Milwaukee, Wis.
Hamilton & Gleason Co.	412,055	Denver, Colorado
Dravo Contracting Co.	3,286,603	Pittsburgh, Pa.

From the above it will be seen that 94.5 per cent of all contracts awarded for major aqueduct features to date have gone to firms whose home offices are outside of California. It is expected that a similar proportion of future contracts will go to outside contractors.

The distribution of contract awards is shown graphically in Chart No. 11.



COLORADO RIVER AQUEDUCT

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Distribution of Awarded Contracts for Tunnel Construction to States in which Home Office is Located.

CHART 11

B-1129-6

Labor Payment also Involves Distribution for Manufactured Goods

In estimating the foregoing distributions of expenditures no account has been taken of the workman's expenditures for the necessities of life. Table 12 shows the average annual expenditure for commodities which are the necessities of life for a typical workman on the aqueduct and his family. At the right-hand side of this table an estimate has been made of the distribution which will result from the purchases of this workman. It will be noted that 29% will go outside of California. This percentage applied to $90,517,000, which is the total amount of the expenditure for labor to remain in California, results in an estimated amount of $26,250,000 to go outside California for the living requirements of the workmen and their families.

TABLE 12

Annual expenditures of typical workman and his family

Items	*Amount*	*California*	*Other States*
Food:			
Meat, fish, etc.	$ 65	$ 65	$ .....
Dairy products	73	60	13
Cereals	10	3	7
Miscellaneous groceries	102	85	17
Vegetables	25	25	.....
Fruits	6	4	2
	$ 281	$ 242	$ 39
Clothing:			
Hosiery	$ 7	$ 3	$ 4
Underwear	17	8	9
Suits	20	4	16
Coats	18	7	11
Dresses	19	11	8
Shirts	4	2	2
Overalls	4	2	2
Gloves	3	2	1
Hats, caps, etc.	9	3	6
Shoes	23	1	22
	$ 124	$ 43	$ 81
Housing:	$ 391	$ 391	$ .....
Fuel and light:			
Gas	$ 27	$ 27	$ .....
Electricity	18	18	.....
	$ 45	$ 45	$ .....
Furniture and furnishings:			
Household furniture	$ 73	$ 39	$ 34
Household furnishings	16	3	13
	$ 89	$ 42	$ 47

TABLE 12 (Continued)

Items	*Amount*	*California*	*Other States*
Transportation:			
Automobile	$ 200	$ 50	$150
Gasoline and oil	62	62	.....
Repairs, tires, etc.	65	50	15
Carfare	37	37	.....
	$ 364	$ 199	$165
Medical care:			
Physician, dentist, occulist	$ 50	$ 50	$ .....
Sundries:			
Barber services	$ 12	$ 12	$ .....
Confectionery	6	6	2
Drugs and toilet articles	14	7	7
Gifts and dues	34	25	9
Insurance	59	.....	59
Reading material	22	11	11
Recreation	24	24	.....
Telephone	18	9	9
Tobacco	24	.....	24
	$ 213	$ 92	$121
Grand Total	$1,557	$1,104	$453
Per cent	100%	71%	29%

Note: Data from reports—National Industrial Conference Board, 1914-30; U. S. Dept. of Labor; Monthly Review, August, 1932; California State Chamber of Commerce; U. S. Dept. of Commerce.

Summation of All Benefits to Other States than California

Table 1 shows a total of $79,330,000 to go outside California for material, insurance, bond premiums, contractors' profit, etc. If the foregoing expenditures of the workmen are added to this, it results in a figure of $105,583,000 (or 55% of the total direct cost of construction) for the total benefit to other states of the nation. Larger figures for the benefits to other states would be shown from successive analyses of the various exchanges or "turnovers" of the money paid out for aqueduct construction. Such further analysis is impracticable and has not been attempted. However, from the foregoing it may be said with confidence that Public Works Administration funds loaned to The Metropolitan Water District of Southern California for construction of the Colorado River aqueduct will benefit the entire nation in a major way.

When the District's application for $59,750,000 now pending before the Public Works Administration is approved, the District can have 16,000 men at work within four months after the money is made available.

The PWA in its press release No. 223 states that for every man employed directly on construction, two are employed behind the lines producing materials and other commodities to serve the construction workmen. Most of these men would be employed fabricating materials for use in the work and providing commodities used personally by the workmen and their families. This means that 48,000 men will be given work as a result of the approval of such a loan of $59,750,000. This employment will benefit California and other states in the same ratio as their productions of the various items of material shown in the foregoing. For every PWA dollar spent on the Colorado River aqueduct, other states than California will receive at least 55 cents.

WHT.B1.0246 (2 of 2)